

REMARKS

Claims 1 – 30 are currently pending in the subject application, and are presently under consideration. Claims 1 – 12, 14, 17 – 25, 27, 30 and 31 stand rejected. Claims 13, 15, 16, 26, 28 and 29 are objected to as being dependent from a rejected base claim, but would be allowable if rewritten in independent form. Claims 5, 6, 9, 21 and 22 have been indicated as being allowable if rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph. Claims 1, 2, 4, 11, 12, 14, 17, 18, 19, 24 and 30 have been amended, and claim 31 has been cancelled. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Interview Summary.

Applicant's representative appreciates the consideration shown by the Examiner in a telephone interview on April 25, 2005. During the interview, Applicant's representative and the Examiner discussed claims 1, 8, 12 and 18 and U.S. Patent No. 5,459,435, issued to Taki. Additionally, with the amendments herein, the Examiner indicated agreement to withdraw the objection of claim 19 under 37 C.F.R. 1.75(c), as well as to withdraw the rejection of claims 1-3, 5-11 and 19 under 35 U.S.C. 112, second paragraph.

The Examiner also indicated that the rejection of claim 18 under 35 U.S.C. 112, second paragraph, might also be withdrawn upon amending the specification appropriately. The specification has been amended to expressly identify examples of structure that correspond the means for controlling that is recited in claim 18. No new matter has been added.

II. Informalities in the Specification have been corrected.

The Specification has been amended herein to add a brief description for FIG. 8, as suggested in the Office Action.

The Related Application section of the subject application has also been updated to more particularly identify a related application; namely, by including its serial number and filing date.

III. The specification, as drafted, provides proper antecedent basis support for the “means for controlling” recited in claim 18.

Claim 18, in pertinent part, recites, “means for controlling oscillating means to provide the internal clock signal at a frequency based on the comparison of the external reference signal and the internal clock signal.” The Office Action contends that the specification fails to provide proper antecedent basis for such recitation. Applicant contends that when the written description is combined with claim 18, the disclosure satisfies the requirements of 37 C.F.R. 1.75(d)(1). In the description of FIG. 2, an oscillator/control system block (66) is introduced. By way of example, the written description of the subject application states that:

“The oscillator/control system 66 can be configured to adjust the frequency of the INTERNAL CLOCK signal by switching in or out one or more components based on the comparator output signal 68.” Page 6, lines 5-7.

The description continues on to describe how the oscillator/control system 66 can effect the changes in frequency. See, *e.g.*, page 6, lines 7-10. As suggested by the Examiner, the specification has also been amended to identify the oscillator/control system 66 as structure corresponding to the means for controlling, such as recited in claim 18. That is, in the example of FIG. 2, the function of the control system has been combined with the function of an oscillator to provide the oscillator/control system 66.

Moreover, FIG. 4 depicts an example of one embodiment of an oscillator/control system 120. The oscillator/control system 120 is shown and described as including an oscillator control block 126, which is descriptive of the function, namely, implementing control of an oscillator. In the context of FIG. 4, the description states that:

“The oscillator control block 126 controls a clock oscillator 128 based on the latched UP/DN and NO CHANGE signals.” Page 8, lines 31-32.

The description further states that:

“The UP/DN signal corresponds to control data indicating whether the CLOCK frequency should be increased or decreased, such as **based on a comparison of frequency information for the CLOCK signal and frequency information for an external reference signal.**” Page 8, lines 22-25 (emphasis added).

Additionally, the description of FIG. 4 has been amended to identify the that oscillator control block 126 may correspond to structure that provides means for controlling, such as recited in claim 18.

From the foregoing examples, it is submitted that claim 18 conforms written description and drawings, and that the terms and phrases used in the claim 18 finds clear support or antecedent basis in the description so that the meaning of the terms in the claims is readily ascertainable by reference to the description. Accordingly, withdrawal of the objection to the specification is respectfully requested.

IV. Claim 19 properly depends from claim 18.

As discussed in the telephone interview of April 25, 2005, claim 19 has been amended by adding a definite article before the means for oscillating. Applicant respectfully submits that claim 19 properly depends from claim 18, such that withdrawal of the objection of claim 19 is respectfully requested.

V. Claim(s) 1 – 3, 5 – 11, 18 – 23 and 31 are definite under 35 U.S.C. 112.

Claim(s) 1 – 3, 5 – 11, 18 – 23 and 31 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 1 has been amended to change the oscillator to an oscillator/control system, such as described with respect to FIGS. 2, 4 and 6. While applicant disagrees that 35 U.S.C. 112 would require that the recited claim elements perform the comparison on which the frequency of the clock signal is adjusted, claim 1 has been amended for other reasons, as described below. As amended and based on the discussions during the telephone interview of April 25, 2005, it is submitted that the recited oscillator/control system does perform the recited functions. For instance, support for the amendment of claim 1 and the operation of the oscillator/control system recited therein can be found, for example, in the written description at page 6, lines 5-11 and at page 8, line 32, through page 9, line 1, which relates to adjusting the frequency of the clock signal. Additional support can be found at page 10, lines 18-29, and at FIG. 6 and the corresponding description, which relates to adjusting the phase of the clock signal.

Claims 2, 4 and 7 have also been amended to be consistent with the changes to claim 1. In view of these amendments, withdrawal of the rejection of claims 1-10 under 35 U.S.C. 112, second paragraph, is respectfully requested.

The Transmittal letter submitted herewith includes payment of an additional independent claim, as suggested in the Office Action and as discussed with the Examiner. Accordingly, the rejection of claim 11 under 35 U.S.C. 112, second paragraph, is believed to be moot.

Claim 18 has been amended for other reasons, as described below. Additionally, for the reasons stated above in Section III of this Response, applicant submits that when the written description is combined with claim 18, the disclosure satisfies the requirements of 35 U.S.C. 112, second paragraph. See *In re Dossel*, 42 U.S.P.Q.2d 1881, 1885 (Fed. Cir. 1997). Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 18 (as well as dependent claims 19-23) under 35 U.S.C. 112, second paragraph.

The Office Action contends that claim 19 lacks clear antecedent basis and, therefore, has been rejected under 35 U.S.C. 112, second paragraph. As mentioned above in Section IV of this Response, claim 19 has been amended to clarify that the synchronization system expressly includes the oscillating means. Withdrawal of the rejection of claim 19 under 35 U.S.C. 112, second paragraph, is respectfully requested.

Claim 31 has been cancelled by this amendment, such that its rejection under 35 U.S.C. 112, second paragraph, is now moot.

VI. Claims 1 – 2, 4, 7 – 8, 10 – 12, 14, 17 – 20, 23 – 25, 27 and 30 – 31 are patentable over U.S. Patent No. 5,459,435 to Taki.

Claims 1 – 2, 4, 7 – 8, 10 – 12, 14, 17 – 20, 23 – 25, 27 and 30 – 31 stands rejected under 35 U.S.C. §102 as being unpatentable over U.S. Patent No. 5,459,435, issued to Taki (“Taki”). Withdrawal of this rejection is respectfully requested for at least the following reasons.

As amended, claim 1 recites an oscillator/control system that provides a clock signal having a frequency, the oscillator/control system adjusts the clock signal by one of switching in and out at least one component in the path of the clock signal based the synchronization signal and the clock signal. Support for the amendment of claim can be found, for example, in the written description at page 6, lines 5-11 and at page 8, line 32, through page 9, line 1, as well as at page 10, lines 18-29, and at FIG. 6 and the corresponding description.

In sharp contrast, Taki fails to teach or suggest that a clock signal can be adjusted by switching in or out one or more components in the signal path of the clock signal, as recited in claim 1. Instead, the circuitry of Taki includes a voltage controlled oscillator that provides

an output signal f' by setting an analog input voltage. Taki does not disclose any component that may be switched in or out to adjust the output signal f' as recited in claim 1. The other art of record further contains no teaching or suggestion to provide the subject matter of claim 1. Accordingly, reconsideration and allowance of claim 1 is respectfully requested. Claims 2-11 are allowable for at least the same reasons as claim 1.

Additionally, claim 4 has been amended to recite that the comparator signal having a value that indicates a desired one of an incremental increase, an incremental decrease and a no-change condition for the frequency of the clock signal. The oscillator/control system incrementally adjusts the frequency of the clock signal based on the comparator signal. Taki does not teach or suggest that any portion of the circuitry incrementally adjusts the frequency of the output signal f' based on a comparator signal, as recited in claim 4. Instead, Taki teaches that the comparison unit 4 provides output data (a voltage data corresponding to a value of the frequency of the output signal f') that is converted into voltage data by a data conversion unit 5. See Taki at Col. 4, lines 38-41, and at Col. 5, lines 66, through Col. 6 line 18. Thus, the content or type of information indicated by the value of the comparator signal of claim 4 is significantly different from the output data (corresponding to a frequency value) provided by the comparison unit 4, as taught by Taki. Taki further teaches that a digital-to-analog converter 6 then converts the voltage data to an analog voltage output that is used to provide a control voltage of a voltage controlled oscillator. See Taki at Col. 4, lines 41-45 and at Col. 6, lines 18-25. Since Taki fails to teach or suggest that the circuit performs (or would be capable to perform) the incremental frequency adjustments based on a comparator signal, as recited in claim 4, claim 4 is also patentable over Taki.

With respect to claim 8, the Office Action contends that recitation of "operating characteristics of an integrated circuit chip comprising the system" is an intended use limitation and, therefore, should be afforded no patentable weight. As discussed with the Examiner during the telephone interview of April 25, 2005, In the contention in the Office Action, claim 8 sets forth a basis (*i.e.*, at least one operating characteristic of an integrated circuit chip comprising the system) that the update control of claim 7 uses to set the rate for updating the frequency of the clock signal. The recitation of "at least one operating characteristic of an integrated circuit chip comprising the system" clearly sets forth the basis, such that one of ordinary skill in the art would clearly understand the metes and bounds of what is being claimed. Stated differently, claim 7 introduces an update control that sets a rate for updating the frequency of the clock signal, and claim 8 further limits the update control

by reciting how the update control sets the rate for updating the frequency of the clock signal. The recitation set forth in claim 8, therefore, is not an intended use as the Office Action suggests.

Additionally, as further discussed the telephone interview of April 25, 2005, in contrast to the recitation in claim 8, Taki discloses signals Ta, Tb and Tc, all of which are disclosed as having the same period but different phases, are used to control and synchronize timing of the circuit components. See Taki at Col. 5, line 48, through Col. 6, line 31. Significantly, Taki fails to teach or suggest any basis for varying the signals Ta, Tb and Tc, or any mechanism for setting a rate at which the frequency of the clock signal is updated based on at least one operating characteristic, as recited in claim 8. Since Taki and other art of record, taken individually or in combination, fails to teach or suggest the system recited in claim 8, claim 8 is patentable.

Applicant submits that claim 10 does not recite an intended use of the system of claim 1, as suggested in the Office Action. Instead, claim 10 recites that the system is (expressly) implemented on an integrated circuit chip. Since claim 10 does further limit the system of claim 1 (to being implemented on an IC), claim 10 does not recite an intended use, as suggested in the Office Action. Accordingly, reconsideration and allowance of claim 10 are respectfully requested.

By this amendment, fees are being paid for treatment of claim 11 as an independent claim. In contrast to the contention in the Office Action, claim 11 does not recite any intended use. Instead, the integrated system of claim 11 recites a particular arrangement of IC chips, many (n-1) of which include the system of claim 12 and at least another IC chip that provides the synchronization signal. Since no reference or combination of references has been presented that teaches or suggests the integrated system of claim 11, reconsideration and allowance of claim 11 are respectfully requested.

Claim 12 has been amended to recite that the oscillator that adjusts the frequency of the internally generated clock signal based on the control signal by at least one of switching at least one component into or out of the oscillator. In contrast, Taki discloses a voltage controlled oscillator 7 that an output signal, having a frequency $N \times f^*$, corresponding to the analog voltage output from the D/A converter 6. Since Taki fails to teach or suggest an oscillator that adjusts the frequency of an internally generated clock signal, as recited in claim 12, claim 12 is patentable over Taki. Accordingly, reconsideration and allowance of claim 12, and claims 13-17 that depend from claim 12, are respectfully requested.

Claim 14 has been amended. The Office Action asserts "the last two lines of claim 14 is merely the function of the comparator 4." Applicant respectfully traverses this assertion as being contrary to the teachings of Taki. As described above, Taki discloses a comparison unit 4 that provides output data, which Taki discloses as being a frequency value. See Taki at Col. 5, line 66, through Col. 6, line 15. This becomes evident when Taki further describes that the digital voltage data from the comparison unit is converted into analog voltage data by a data conversion unit 5. See Taki at Col. 4, lines 38-41, and at Col. 6 lines 16-20. Thus, Taki teaches that the value of the signal provided by the comparison unit 4 is a frequency value, and not a value that indicates one of an incremental increase, an incremental decrease and a no-change condition for the frequency of the clock signal, as recited in claim 14.

Moreover, if the comparison unit of Taki were to provide a comparator signal as recited in claim 14 (as appears is being suggested in the Office Action), it is submitted that the VCO 7 of Taki would likely only be capable of providing the signal $N \times f$ at most three (and likely only two) possible frequencies; namely, a first frequency when the comparator signal indicates an incremental increase, a second frequency when the comparator signal indicates an incremental decrease, and a third frequency when the comparator signal indicates a no-change condition. Accordingly, if the comparison unit performed as suggested in the Office Action, the circuitry disclosed in Taki would be inoperative for its intended purpose.

For these reasons, Applicant requests reconsideration and allowance of claim 14.

Claim 18 has been amended to incorporate claim 21, which has been indicated as containing allowable subject matter. Accordingly, reconsideration and allowance of claim 18 are respectfully requested. Claims 19, 20, 22 and 23, which depend from claim 18, are allowable for at least similar reasons.

The method of claim 24 has also been amended to reciting that the frequency of the internally generated signal is adjusted by one of switching in and out at least one component in the path of the internally generated signal. Since, for the reasons stated above with respect to claim 14, Taki fails to teach or suggest adjusting the frequency of the output signal in the manner recited in claim 24, claim 24 is not anticipated by Taki. Accordingly, applicant respectfully requests allowance of amended claim 24. Claims 25, 27 and 30 depend from claim 24 and thus should be allowed for at least the same reasons as claim 24.

VII. Claim 3 is not obvious in view of U.S. Patent No. 5,459,435, issued to Taki.

Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Taki. Claim 3 should be allowed for the same reasons as claims 1 and 2 from which it depends. Withdrawal of this rejection is respectfully requested.

VIII. Allowable Subject Matter

Applicants appreciate the indication of allowable subject matter with respect to claims 13, 15, 16, 26, 28 and 29 if rewritten in independent form. Applicant further appreciates the indication of allowable subject matter with respect to claims 5, 6, 9 and 21 – 22 if rewritten to overcome the rejection(s) under 35 U.S.C. 112.

IX. CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Should the Examiner have any questions concerning this paper, the Examiner is invited and encouraged to contact Applicant's undersigned attorney at (216) 621-2234, Ext. 106.

The Transmittal letter submitted herewith provides for charges of \$200.00 for payment of claim 11 as an independent claim. No additional fees should be due for this response. In the event any further fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to Deposit Account No. 08-2025.

Respectfully submitted,

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